

Remarks

Claim 7 is amended and claims 18-23 are added herein.
Claims 1-23 will be pending upon entry of the amendment.

The following remarks are responsive to the final Office action mailed September 5, 2006.

Applicants acknowledge the indicated allowability of claims 7 and 10. Claim 7 is amended herein for the sole purpose of improving the form of the claim.

Response to Rejection of Claims under 35 U.S.C. §103Claim 1

Applicants respectfully request reconsideration of the rejection of claim 1 under 35 USC §103 as being obvious in view of the combination of WO 99/59907 (O'Connor) and U.S. 2,428,097 (Roslund).

Personal care absorbent articles such as disposable diapers, training pants, other infant care products, other child care products, feminine napkins, panty liners, interlabial pads, other feminine care products, incontinence articles, and other adult care products are typically manufactured using high-speed processing machines which convert a stabilized web or ribbon of a fibrous absorbent material into an article. To prevent interruption of the processing machine when the material in one roll is exhausted, a trailing end of each coil is spliced to a leading end of the next coil. The resulting interconnected web has essentially a continuous length and the splice has a sufficient tensile strength so that it may be provided to the machine and processed without breaking at the splice.

One drawback to conventional splicing techniques is that the splice is not fluid permeable and therefore unusable in an article. In the past, fibrous absorbent materials have been

joined by an adhesive or, since they do not have smooth surfaces which readily hold an adhesive, by an adhesive tape. Adhesives and tape are substantially impermeable to fluid. As a result, it is necessary to cull all spliced regions of the absorbent material, or to cull all articles that may incorporate a portion of a spliced region, in order to remove all adhesive or tape.

Claim 1 is directed to a personal care absorbent article having a spliced absorbent material. The article comprises:

- a fluid permeable body side liner for placement adjacent a wearer; and

- an absorbent core attached to the body side liner for absorbing fluid passing through the liner, said absorbent core including:

- a first portion of absorbent material;

- a second portion of absorbent material; and

- a piece of splicing material directly attached to said first and second portions of absorbent material, said splicing material having a fluid permeability at least about 25% as great as a fluid permeability of said first portion of absorbent material and at least about 25% as great as said second portion of absorbent material.

The combination of O'Connor and Roslund et al. fail to teach or suggest each and every feature recited in claim 1.

Claim 1 is submitted to be patentable over O'Connor in view of Roslund in that the cited references, whether considered alone or in combination, fail to teach or suggest a piece of splicing material having a fluid permeability at least about 25% as great as a fluid permeability of the first portion of absorbent material and at least about 25% as great as the second portion of absorbent material.

O'Connor discloses a strip of material with splices, wherein the material may be an absorbent material. With particular reference to Fig. 1, the trailing end of one strip (19) is spliced to the leading end of another strip (20) by stitching the ends together with yarn (21). O'Connor discloses the use of yarn (21) as a splicing material but fail to teach the material construction of the yarn or the permeability thereof relative to the permeability of the strips. Thus, O'Connor fails to teach a splicing material having a fluid permeability at least about 25% as great as a fluid permeability of either strip (19, 20).

Roslund discloses a method of splicing the ends of a single-piece of drier felt together to form a closed looped fabric. In particular, opposite ends a, b (Figs. 3 and 4) of the drier felt are placed in overlapping relation with a cement strip 10 interposed between the overlapping ends of the felt. Column 4, lines 16-19, claims 1, 2, 3, and 6, and Fig. 3 of Roslund. According to Roslund, solvent and pressure are applied to the overlapping ends of the felt "to soften the cement and cause the same to flow, entering the fabric of the felt ends for a distance adjacent the opposing surfaces thereof." Column 4, lines 29-47. Once the cement re-hardens, a firm bond is established thereby forming the closed looped fabric.

Nowhere does Roslund disclose that the cement strip has a fluid permeability at least about 25% as great as a fluid permeability of the drier felt. In fact, it is clear that the cement of Roslund is impermeable. See, e.g., column 3 lines 51-55 and 68-70. At column 3, lines 62-68, Roslund expressly recognizes that the cement strip reduces the porosity (and therefore the fluid permeability) of the fabric. Thus, to provide some fluid flow through the impermeable cement, Roslund

further discloses that recurrent openings 11 (Fig. 1) or 11' (Fig. 2) are provided in the cement strip prior to softening of the cement. See column 3, line 71-column 4, line 2. The cement strip is softened by a solvent and the softened cement flows into the pores of the fabric due to pressure applied to the fabric by a suitable pressure member. See column 4, lines 16-47. Roslund notes that the size of the openings in the cement strip decrease upon softening of the strip, such as up to 25%. Thus, the openings are made large enough so that they don't completely close upon softening of the cement. Column 4, lines 48-65. The obvious reason for doing so is that if the openings completely close, no fluid can flow down through the thickness of the spliced regions.

As set forth by Roslund at column 4, lines 5-15, following bonding of the fabric by the cement strip with openings, the bonded areas of the fabric will have interspersed therethrough areas where the fabric is not bonded and through which fluid can readily penetrate. It is implicit, then, that the areas in which the fabric is bonded are liquid impermeable, i.e., fluid cannot penetrate through those areas in which the cement is present. As can be seen in Figs. 1 and 2 of Roslund, the cement area of the strip is significantly greater than the combined area of the openings therein, and as Roslund discloses, the size of the openings decreases further upon softening. Thus, the openings are even smaller than they are shown in Figs. 1 and 2 once the cement is used to bond the overlapping ends of the drier felt together (e.g., Fig. 5). Nowhere does Roslund indicate that the fluid permeability through the cement strip is at least about 25% as great as the fluid permeability of either of the overlapping ends of the drier felt.

As a result, Roslund fails to teach that the cement strip has a fluid permeability at least about 25% as great as a fluid permeability of the first portion of absorbent material and at least about 25% as great as the second portion of absorbent material as recited in claim 1.

It appears that the Office action takes the position that Roslund inherently discloses that the cement strip has a fluid permeability that is at least about as great as the felt fabric. See page 4 of the final Office action. Respectfully, this is not so. Nowhere does Roslund assert or suggest that the fluid permeability of the cement strip is as great as the fluid permeability of the felt or even 25% as great as the felt. In fact, Roslund recognizes that the cement strip significantly adversely affects the flow characteristics of the felt fabric. See, e.g., column 3, lines 63-70. The openings in the cement strip can only compensate so much for the fluid impermeability of the cement.

To establish inherency, the prior art "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." M.P.E.P. §2112 citing *In re Robertson*, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). Roslund fails to teach, explicitly or inherently, that the piece of splicing material (i.e., the cement strip 10) has a fluid permeability of at least about 25% as great as a fluid permeability of the first portion of absorbent material (i.e., the fabric portion a) and at least about 25% as great as a fluid

permeability of the second portion of absorbent material (i.e., the fabric portion b).

Since O'Connor and Roslund fail individually to teach or suggest a piece of splicing material having a fluid permeability at least about 25% as great as a fluid permeability of the first portion of absorbent material and at least about 25% as great as the second portion of absorbent material, a combination of these references also fails to teach or suggest such a feature.

There is no suggest or motivation to combine Roslund et al. with O'Connor.

O'Connor expressly teaches the importance of leaving a substantial portion of the strips uncovered at the seam therebetween. According to O'Conner, such a configuration provides an area "A" defined between stitch holes across the butting ends and having an absorption effect which is substantially equal to that of the remainder of the strip. Thus, O'Conner teaches using stitches in order to leave a substantial portion of the strips uncovered to thereby reduce the effect of the splice on the absorptive properties of the strip itself.

Thus, one skilled in the art would not be motivated by Roslund et al. or any other reference to replace the yarn stitches of O'Connor with a splicing material that extends over a majority of the spliced portions, such as the splicing material of Roslund et al., because doing so would do express violence to the teachings of O'Connor. That is, doing so would reduce the porosity of the materials that are spliced together by the yarn stitches, which is contrary to why O'Connor used the stitches in the first place. As a result, one of ordinary skill

in the art would not be motivated to combine Roslund et al. with O'Connor.

For these reasons, claim 1 is submitted to be nonobvious and patentable over the references of record.

Claims 2-22, depending directly or indirectly from claim 1, are submitted to be nonobvious and patentable over the references of record for the same reasons as claim 1.

Claim 2

Claim 2 depends from claim 1 and further recites that the splicing material has a fluid permeability at least about as great as a fluid permeability of said first portion of absorbent material and at least about as great as said second portion of absorbent material. As explained in detail with respect to claim 1, neither Roslund et al. nor O'Connor teach or suggest a splicing material that is at least as fluid permeable as the material that is being sliced.

Accordingly, claim 2 is submitted to be further patentable over the combination of O'Connor and Roslund et al.

Claim 11

Claim 11 depends from claim 1 and recites that the first portion comprises a leading end and a trailing end and said second portion comprises a leading end and a trailing end, and wherein the trailing end of said first portion is arranged squarely end-to-end adjacent the leading end of said second portion. In other words, claim 11 is directed to a butt joint.

O'Connor teaches that butt joints should be used when splicing the trailing end of one strip to the leading end of another strip such that there is no overlapping of the trailing and leading ends. See page 11, lines 11-13 of O'Connor.

O'Conner explains that the use of butt joints is important because they do not affect the absorptive abilities of the spliced strip. See page 12, lines 18-20.

The Office clearly understands that O'Connor teaches that the butt joints are critical for maintaining product absorbency. For example, the Office action states that O'Connor expressly teaches butt joints and that "[i]n this way the splicing portions (A) of the strip can be used in the products without compromising the absorbency at the splices." See page 3 of the final Office action.

Roslund et al., on the other hand, teaches that the trailing and leading ends of the dryer felt need to be overlapped and the splicing material placed between the overlapped regions. See, for example, Fig. 3. Overlapping the regions is important in Roslund et al. because it allows the cement, when softened, to permeate into both the dryer felt overlying the splicing material and the dryer felt underlying the splicing material. Basically, Roslund et al. is teaching gluing overlapping and underlapping regions of the dryer felt. It is readily apparent that the splicing material of Roslund et al. is unsuitable for use at butt joints as taught by O'Connor.

Accordingly, one of ordinary skilled in the art would not be motivated to replace the splicing yarn of O'Connor with the splice material of Roslund et al. (as suggested by the Examiner) because doing so would go against the express teachings of both O'Connor and Roslund et al.

As a result, claim 11 is submitted to be further patentable over the combination of Roslund et al. and O'Connor.

Claim 12

Claim 12 depends from claim 1 and recites that the first portion comprises a leading end and a trailing end and said second portion comprises a leading end and a trailing end, and wherein said trailing end of said first portion overlaps the leading end of said second portion. As mentioned above with respect to claim 11, O'Connor teaches away from overlapping the ends of the material being spliced. Thus, despite the teaching of Roslund et al., one of ordinary skill in the art would not be motivated to overlap the ends of the material being spliced because O'Connor expressly teaches away from such an arrangement.

Accordingly, claim 12 is submitted to further patentable over O'Connor and Roslund et al.

Claim 15

Claim 15 depends from claim 14 and recites that the piece of splicing material is a first piece of splicing material attached to said first surface of the trailing end of the first portion and to said first surface of the leading end of the second portion, further comprising a second piece of splicing material attached to the second surface of the trailing end of the first portion and to the second surface of the leading end of the second portion. Thus, claim 15 requires two pieces of splicing material. Neither Roslund et al. nor O'Connor teach or suggest using two pieces of splicing material as recited in claim 15. Moreover, the Office action is silent as to how either Roslund et al., O'Connor, or any other prior art reference teach or suggest the features recited in claim 15.

As a result, claim 15 is submitted to be further patentable over the references of record including Roslund et al. and O'Connor.

Discussion of New Claims

Claim 18

New claim 18 depends from claim 1 and recites that the piece of splicing material includes fibers having polyolefin content. Roslund et al. teaches that the splicing material is cement, and O'Connor teaches that the splicing material is a yarn. Thus, neither Roslund et al. nor O'Conner teach or suggest a splicing material including polyolefin content as recited in claim 18. Accordingly, claim 18 is submitted to be further patentable over Roslund et al. and O'Connor for these additional reasons.

Claim 19

Claim 19 depends from claim 18 and recites that the piece of splicing material is a nonwoven. Since neither Roslund et al. nor O'Conner teach or suggest a nonwoven splicing material, claim 19 is submitted to be further patentable over Roslund et al. and O'Connor.

Claim 20

Claim 20 depends from claim 1 and recites that the first portion of absorbent material is spaced from the second portion of the absorbent material to define a gap therebetween. Neither Roslund et al. nor O'Connor teach or suggest having a gap between the portions of material being spliced together. Accordingly, claim 20 is submitted to be further patentable over Roslund et al. and O'Connor for these additional reasons.

Claim 21

Claim 21 depends from claim 2 and recites that the splicing material has a fluid permeability greater than the fluid permeability of said first portion of absorbent material and said second portion of absorbent material. As set forth in detail with respect to claims 1 and 2, neither O'Conner nor Roslund et al. teach or suggest a splicing material with a permeability that is greater than the permeability of the material being spliced. For these additional reasons, claim 21 is submitted to be patentable over Roslund et al. in combination with the O'Connor.

Claim 22

Claim 22 depends from claim 16 and recites that the splicing material has a generally Z-shape. An exemplary embodiment of an absorbent article having a z-shaped splicing material is shown in Fig. 3A of the present application. Neither Roslund et al. nor O'Connor teach or suggest a splicing material having a generally z-shape. As a result, claim 22 is submitted to be patentable over Roslund et al. and O'Connor for these additional reasons.

Claim 23

Claim 23 depends from claim 1 and recites that the first portion has a trailing end and the second portion has a leading end adjacent to and aligned with the trailing end of the first portion thereby defining an aligned junction of the first and second portions having a length extending generally transverse of the first and second portions, the piece of splicing material being attached to both of the trailing end of the first portion

and to the leading end of the second portion of absorbent material such that the splicing material extends continuously over a majority of the length of the aligned junction.

O'Conner fails to show or suggest a splicing material that is attached to the trailing end of one strip and the leading end of another and extends continuously over a majority of the length of the aligned junction. While the yarn stitching is shown in Fig. 3 of O'Conner as winding continuously along the length of the seam, it does not extend continuously "over" the length of the seam (e.g., covering the seam) as recited in claim 12. Indeed, covering the length of the seam would violate the express teachings of O'Conner to leave uncovered a substantial portion of the strips along the length of the seam.

Thus, one skilled in the art would not be motivated by Roslund et al. or other reference of record to provide a splicing material that extends continuously over a majority of the length of the aligned junction.

For these additional reasons, claim 23 is submitted to be nonobvious and patentable over the references of record.

KCC 16,733.2

KCC 4809.4

Conclusion

In view of the foregoing, favorable consideration and allowance of claims 1-23 is respectfully requested.

The Commissioner is hereby authorized to charge the fee for the additional three dependent claims to Deposit Account No. 19-1345. The Commissioner is also hereby authorized to charge any additional fees due and to credit any overpayment to Deposit Account No. 19-1345.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Richard L. Bridge". The signature is fluid and cursive, with the first name "Richard" and last name "Bridge" clearly distinguishable.

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